

Understanding Data Types

Test your Knowledge

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What type would you choose for the following “numbers”?

A person’s telephone number `long`

A person’s height `float`

A person’s age `int`

A person’s gender (Male, Female, Prefer Not To Answer) `bool`

A person’s salary `long`

A book’s ISBN `long`

A book’s price `float`

A book’s shipping weight `float`

A country’s population `long`

The number of stars in the universe `long`

The number of employees in each of the small or medium businesses in the

United Kingdom (up to about 50,000 employees per business) `int`

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What are the difference between value type and reference type variables? What is boxing and unboxing?

1. Value type will directly hold the value, reference type will hold the memory address or reference for its value

2. Value type in stack while reference type in heap
3. Value type not be collected by garbage collector, reference type is when no more reference
4. Value type created by struct or enum, reference by classes, interfaces, delegates,array
5. Value not accept null value but reference type does accept

boxing: convert a value type into a reference type

unboxing: convert a reference type back to value type

```
int i = 10;  
object o = i; // boxing  
int j = (int) o; //unboxing
```

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[What is meant by the terms managed resource and unmanaged resource in .NET](#)

Managed code is the code which is managed by the CLR(Common Language Runtime) in *.NET Framework*. Whereas the Unmanaged code is the code which is directly executed by the operating system.

Managed:

- executed by managed runtime environment or managed by CLR.
- Provided security to the application written in .NET
- Memory buffer overflow does not occur

Unmanaged code:

- executed directly by os
- No security to application
- Memory buffer overflow may occur

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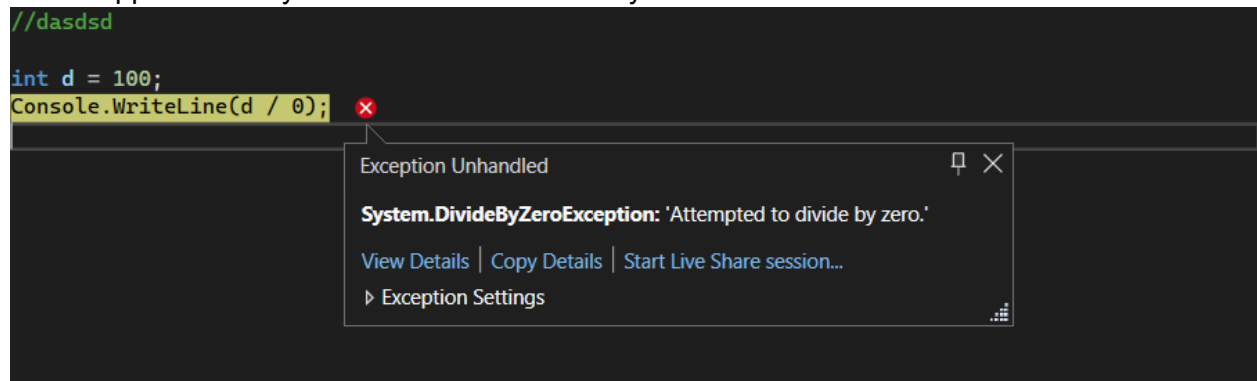
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[Whats the purpose of Garbage Collector in .NET?](#)

NET's garbage collector manages the allocation and release of memory for your application. Each time you create a new object, the common language runtime allocates memory for the object from the managed heap. And the GC automatically collected when not referenceed

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What happens when you divide an int variable by 0?



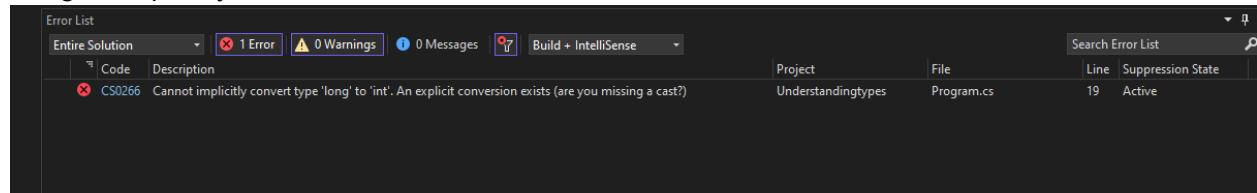
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What happens when you divide a double variable by 0? [Return infinity](#)

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What happens when you overflow an int variable, that is, set it to a value beyond its

Range? Explicitly has errors



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What is the difference between `x = y++`; and `x = ++y`;

1. `X = Y` VS `X = Y+1`;
2. `Y = y +1`;

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What is the difference between `break`, `continue`, and `return` when used inside a loop

Break Statement	Continue Statement
The Break statement is used to exit from the loop constructs.	The continue statement is not used to exit from the loop constructs.
The break statement is usually used with the switch statement, and it can also use it within the while loop, do-while loop, or the for-loop.	The continue statement is not used with the switch statement, but it can be used within the while loop, do-while loop, or for-loop.
When a break statement is encountered then the control is exited from the loop construct immediately.	When the continue statement is encountered then the control automatically passed from the beginning of the loop statement.
Syntax: break;	Syntax: continue;

statement?

Return will get out of the method and return a value

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What are the three parts of a for statement and which of them are required?

initialize, test, and update

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What is the difference between the = and == operators?

1. = for assign
2. == is equal

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Does the following statement compile? `for (; true;) ;` [Infinite loop](#)

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What does the underscore `_` represent in a switch expression?

[The underscore \(`_`\) character replaces the **default** keyword to signify that it should match anything if reached.](#)

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What interface must an object implement to be enumerated over by using the `foreach` statement?

[The `IEnumerable` interface](#)